STUDENT EDUCATION NUMBER									

GOVERNMENT OF SAMOA
MINISTRY OF EDUCATION, SPORTS AND CULTURE

Samoa School Certificate

MATHEMATICS

2017

QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours & 10 minutes

INSTRUCTIONS

1. You have 10 minutes to read **before** you start the exam.
2. Write your **Student Education Number (SEN)** in the space provided on the top left hand corner of this page.
3. **Answer ALL QUESTIONS.** Write your answers in the spaces provided in this booklet.
4. If you need more space, ask the Supervisor for extra paper. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.

STRANDS		Page	Time (min)	Weighting
STRAND 1:	AGRICULTURE IN SAMOA	2	14	8
STRAND 2:	SOILS	4	18	10
STRAND 3:	FARM MANAGEMENT, ECONOMICS AND MARKETING	6	36	20
STRAND 4:	CROP PRODUCTION	9	44	24
STRAND 5:	ANIMAL PRODUCTION	14	54	30
STRAND 6:	TOOLS	19	14	8
TOTAL			**180**	**100**

Check that this booklet contains pages 2-22 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION

STRAND 1: **AGRICULTURE IN SAMOA** **Weighting 12**

1. The 6 am temperature in one of the coldest city in Europe is 0^0. The noon reading is 12ºC higher than this, but by midnight the temperature has fallen to 11ºC below the noon reading.

(a) What is the temperature at noon?

SL 1

(b) What is the temperature at midnight?

SL 1

(c) By how many degrees Celsius has the temperature fallen between 6 am and midnight?

SL 1

2. A water tank is $\frac{3}{5}$ full at the beginning of the month. During the month 400 L of water were used leaving the tank $\frac{1}{5}$ full. How much water does the tank hold when full?

SL 3

3. State why $\frac{5}{8}$ and $\frac{4}{7}$ are **not** equivalent fractions.

SL 1

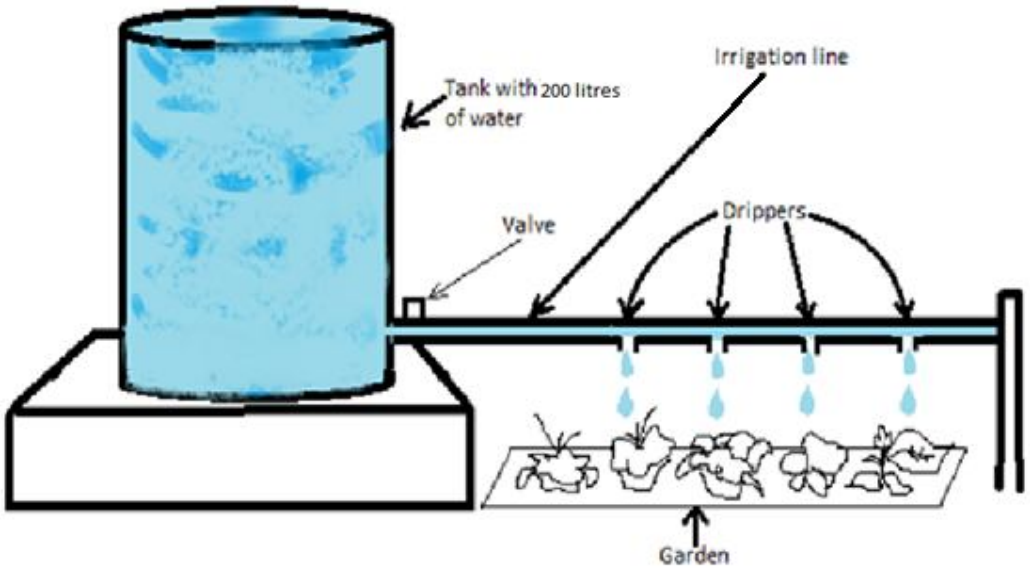
4. Add and simplify $\frac{3}{a} + \frac{5}{2a}$

SL 2

5.	Tia spent 0.2 of his money on ice cream and 0.4 of his money on a soft drink. If he had $2 left how much money did he have to start with?	SL 2
6.	Convert 160 into standard form.	SL 1

QUESTION 2:	ALGEBRA	Weighting 33

1. There are 200 litres of water in Sione's tank. There are 4 "drippers" on the irrigation line from the tank that can be used to water his garden. Each dripper uses 5 litres of water per day. See diagram below.



(a) Calculate the amount of water, **W**, **left** in the tank after one day.

SL 2

(b) At the end of the day on the 2nd of December there were 120 litres of water in the tank.

The next day, 3 **"drippers**" were used.
At the end of that day there were 39 litres of water left.

Calculate how much water each "dripper" used that day.
(the question says "each dripper uses 5 litres of water per day". This ends up contradicting that)

SL 3

(c) If f(x) = x – k, Find f(k - 1).

SL 1

2. (a) Find the value(s) of x in this expression. $6x(x-4)=0$

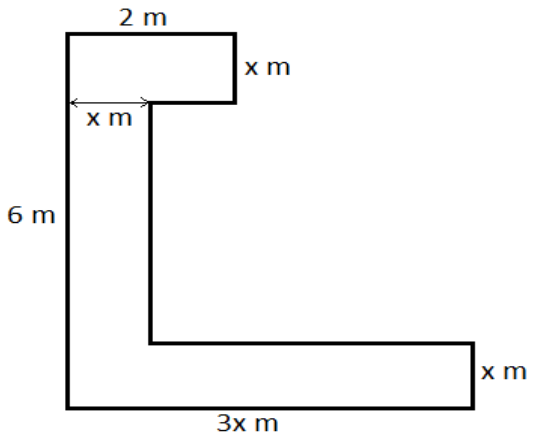
SL 2

(b) Define a quadratic expression.

SL 1

3. Give an example of an equation of a circle.

SL 1



4. Jim needs to make a path from the front to the back of his house, as shown in the diagram above. **x** is the width of the path, in metres. Jim has sufficient concrete to make a path with a total area of 9 m^2.

Note: The diagram is not drawn to scale.

(a) Write an expression (in **x**) to represent **the total area** of the path.

SL 4

(b) Solve your expression in (a) page 8 to find the width x, of the path.

SL 1

(c) Show, by explaining that the equation for the width of the path, **x**, is an example of a linear equation.
(wording not clear - Can it be changed to "*Explain how the equation for the width, W = x, of the path is an example of a linear equation.*"

SL 1

5. RLSS uses two vans to take a group of students on a field trip.
If four students moved from van A to van B, then the two vans would have the same number of students in each.
If instead, four students moved from van B to van A, then van B would have half the number of students that were then in van A.

Use this information to find the total number of students on the field trip.
(To help you start this problem, let x = the number of students who were originally in van A, and y = the number of students who were originally in van B). The equation for the first information is given to help you.

$$x - 4 = y + 4.$$

Note: You must give at least one equation that you use in solving the problem.(with the change made, this Note is now unnecessary.)

SL 4

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AGRICULTURAL SCIENCE

2017

(For Scorers only)

STRANDS	Weighting	Marks	Check Marker
STRAND 1: AGRICULTURE IN SAMOA	8		

STRAND 2:	**SOILS**	10		
STRAND 3:	**FARM MANAGEMENT, ECONOMICS AND MARKETING**	20		
STRAND 4:	**CROP PRODUCTION**	24		
STRAND 5:	**ANIMAL PRODUCTION**	30		
STRAND 6:	**TOOLS**	8		
	TOTAL	**100**		